

**CHANGING WELFARE IN A CHANGING WORLD?: INCOME AND EXPENDITURE
INEQUALITIES IN THE CZECH AND SLOVAK REPUBLICS**

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This research is dedicated to the memory of Aldi Hagedaars--friend, colleague, and guiding light.

CHANGING WELFARE IN A CHANGING WORLD?: INCOME AND EXPENDITURE INEQUALITIES IN THE CZECH AND SLOVAK REPUBLICS

ABSTRACT

The question addressed in this research is how changes in the first years of the transition in the Czech and Slovak republics are reflected in the income and expenditure distributions of households. Using data from the 1989 and 1992 Czech and Slovak Family Budget Surveys (FBS), flow income and consumption expenditure inequalities are examined. Overall inequality results are presented in addition to decomposition results by income sources and expenditure components. Contrary to expectations, household per capita income and expenditure inequality decreased marginally or changed little for the two republics from 1989 to 1992 for households represented by the FBS samples (households headed by workers, employees, those working in agriculture, and pensioners without economically active members). Findings in this study suggest that the trend toward greater income equality has resulted from transfer benefits becoming more targeted to those with lower incomes, wage taxes becoming more progressive, pension incomes being indexed, and an increasing proportion of persons in the total population living in pensioner households. In both republics, aggregate equalizing effects on aggregate expenditure inequality are from changes in private transportation expenditures, in part resulting from the removal of subsidies for basic commodities. The trend toward greater equality is also likely to be related to the FBS methodology; for example, by 1992, a smaller percentage of population households were represented by the FBS sample design than in 1989.

The year 1989 marks a major turning point for Czechoslovakia, as it does for many other transition countries in east central Europe. In late 1989 the totalitarian system was rejected, and a new government established. With this new government came political and economic changes to transform Czechoslovakia into a pluralistic, market-based democracy from one based on central planning and rule. However, within the two republics of Czechoslovakia, differences in opinion concerning the approaches to accomplish the transition emerged. Leaders in the Czech republic promoted a rapid but phased introduction of the market. In contrast, a more interventionist, less harsh economic reform was preferred in the Slovak republic (also referred to as Slovakia). Differences between the republics eventually lead to a new name for the country in April 1990, the Czech and Slovak Federal Republic, and then to a split into two separate countries on January 1, 1993. Although both republics supported strong social policies, their differences were translated into variations in social policy implementation in 1990 and 1991. However, by 1992, reforms regarding unemployment and other social programs, including pensions, were harmonized in the two republics. The implementation of privatization reforms continued to diverge however.

The purpose of this study is to examine, from a standard economic perspective, how households living in the two republics have responded to and been affected by the changing economy and reforms introduced during the early years of the transition period. Such an approach presupposes that welfare, interpreted here as economic well-being, is our ultimate concern. The response of and impact on households is especially important to study because the success or failure of the reforms is greatly dependent upon households. Neglecting the situation of households can lead to social uneasiness and distrust of the government making the reforms. The periods 1989 and 1992 serve as the basis for the analysis, since 1989 is the last year central planning dominated the economy and 1992 is the last year the republics formed one country.

Economic well-being is assessed in terms of inequality in both household per capita income and expenditures, because it is not clear *a priori* which is a better measure of this concept. By examining inequality, the focus is on relative rather than absolute economic well-being. Although income is the traditional resource used by researchers to assess economic well-being, expenditures are likely to become

more valuable for this measurement as the shadow economy gains in importance and income reporting in household surveys decreases. Several inequality measures are used to examine differences overall.

Aggregate inequality is examined further by decomposing it by sources. Comparisons are made across the republics and across time. Microlevel household data from the Family Budget Surveys (FBS) from each republic are used for the analysis. FBSs have been conducted annually since the 1950s. Although not entirely representative of the total population by 1992, the FBS data set was chosen for the analysis because it is the only source which includes information on both income and expenditures. Microcensus surveys are used to collect income data from a more representative sample of the population; however these data are only collected once every four or five years, limiting their usefulness in assessing welfare during this rapidly changing transitional period.

This research is different from the work of others studying the transition in the Czech and Slovak republics in three ways: (1) adjustments are made in the data to make the FBS sample more representative of the total population; (2) the same samples are used to assess welfare using both income and expenditures from the FBS; and (3) the inequalities in income and expenditures are decomposed into factor components and changes over time are identified. Although other researchers (see for example: Atkinson and Micklewright 1992; Dlouhy 1991; Garner et al. 1995; Hirs1 1993; Jilek et al. 1995; Kucharova 1993; Milanovic 1992a, 1992b; UNICEF 1993; Vavrejnova 1993; Vavrejnova and Moravcikova 1994; Vecernik 1995) have examined the incomes and/or expenditures of households in the Czech and Slovak republics, none have followed an approach such as the one employed here.

It must be emphasized that this study focuses on distributional concerns without focusing on equality of opportunity, the gap between rich and poor, or levels of welfare specifically. Some individuals have been more able to take advantage of greater opportunities while others have not. Some have become richer and others poorer. Focusing on these opportunities and the gap between rich and poor reflects other major objectives of welfare which analyses such as this one do not address.

The remainder of this chapter is organized into four sections. Section I provides a brief description of the economy in the two republics and outlines the economic changes and reforms which are likely to have influenced households' incomes and expenditures during the early years of the

transition period. Section II is a presentation of the methodology and data. Section III includes the results and discussion of the major findings. Section IV summarizes my ideas concerning the changes in inequality, along with some concluding comments.

I. INSTITUTIONAL BACKGROUND AND POTENTIAL RELATIONSHIP TO INEQUALITY

A. Economic Background

In 1948, Czechoslovakia became part of the Soviet bloc; democracy was replaced by a totalitarian regime and central planning was introduced. A deliberate equalization policy was applied to wages, incomes, and retirement pensions by this regime, with differences in family size accommodated by generous family benefits. Based on this strategy, small differences among different strata of the population resulted. In terms of industrial structure, the private non-agricultural sector was virtually eliminated during 1948-53. By the mid-1970's, agriculture became highly collectivized with agro-industrial enterprises combining farms and processing, and by 1985, collective agriculture accounted for 90 percent of gross farm output (Jeffries 1993). From 1948 through 1989, official unemployment did not exist. In the 1980s the Czechoslovak economy stagnated and there was an underlying deterioration in key aspects of economic performance.

The decline in economic performance continued through 1992 (see Dyba and Svejnar 1995). From 1989 to 1992, real industrial and agricultural output fell in both republics. Decreases in average employment and the productivity of labor also resulted; however, labor hoarding was expected. In terms of purchasing power, through 1991, increases in the average wage and money incomes did not keep pace with inflation. However, by 1992, they did. Through 1991, annual increases in money income were greater than those for wages; this suggests that people were finding other ways to supplement their incomes. In general, economic performance, as measured by the aforementioned factors, was quite similar in the two republics from 1989 to 1992. However, differences emerged in terms of unemployment. From the beginning, Slovakia experienced greater unemployment than did the Czech republic primarily due to its historically greater dependence on heavy industry and armaments. By 1992

unemployment in the Czech republic was only 2.6 percent while in Slovakia it was 10.3 percent.

Durations of unemployment were also longer in Slovakia than in the Czech republic.

B. Reforms

With the transition to the market and dismantling of the previous regime, the government introduced reforms to promote privatization and reduce subsidies, while at the same time revising social policies and activating a new social safety net. Reforms were introduced which lead to changes in industrial and employment structure, income taxes and transfer benefits. Each of these would be expected to affect the distribution of income. Factors likely to affect expenditures include changes in policies related to commodity taxes and prices, and the quantity and quality of commodities available.

1. Reforms Related to Industrial Structure and Employment

The primary change in industrial and employment structure resulted due to government policies promoting extensive privatization. Unlike in Poland and Hungary, Czechoslovakia started its transformation process from a position of virtually complete state ownership of the economy; only 1.2 percent of the labor force belonged to the private sector in 1989 (Dyba and Svejnar 1995). However by 1992, the private sector was providing jobs to about 50 percent of the labor force in the Czech republic (OECD 1994); the rate was somewhat lower for Slovakia. In both 1991 and 1992, employment in the traditional state and cooperative sector fell by more in the Czech republic than in Slovakia (CEC 1993a). These differences would be expected to lead to greater wage inequality in the Czech republic.

Privatization also prompted the transfer of state property to private hands through restitution and voucher distributions, bringing windfall gains to some owners. Owners could use this “new” property to generate additional income.

The structure of employment changed in other ways also, for example by branch and gender. During this time period employment in agriculture and industry steadily declined; however, employment in the service sector increased (OECD 1994; CEC 1995). In 1989, the proportion of persons employed in industry was fairly comparable across the republics, while the proportion employed in agriculture was slightly greater in Slovakia than in the Czech republic. However, by 1992, major shifts in employment had occurred, impacting the republics differently. Employment in agriculture fell by a third in the Czech

republic but only by about half that in Slovakia from 1989 to 1992. The share of employment in industry fell by 10 percent in Slovakia versus only 5 percent in the Czech republic (CEC1993b).

Under the previous regime, a high rate of labor force participation was stimulated by a social policy predicated on the model of a two-earner family and the collective upbringing of children. Thus, high rates of labor force activity existed for both men and women; in 1989 male activity rates were 95 percent in the Czech republic and 92 percent in Slovakia; the female rates were 90 percent and 80 percent, respectively, for the two republics. By 1992, labor force participation rates declined for males by about 3 percentage points; the decline for females was from 10 to 12 points (CEC 1995).

As part of the comprehensive stabilization program of the country, relatively strict wage controls were introduced in 1991 and 1992. Enterprises, primarily those with majority state or municipal ownership, were taxed heavily if they allowed their wage bill to rise above a certain percentage. By 1992, wage growth was tied to firm productivity; however, wages were expected to remain fairly compressed.

Because of the decreased demand for industrial goods and state sector production, policies were introduced to reduce labor supply. Compared to other countries in transition in the region, “a much larger component of employment reduction in the Czech republic has been accompanied by pushing people out of the labor force rather than into unemployment” (OECD 1994, p. 4). In Slovakia, redundant workers have been more likely to be pushed into unemployment (CEC 1993b).

Policies to reduce labor supply included the introduction of retirement schemes to encourage older workers to leave the work force. For example, in 1991 a high personal income tax rate for those working above the retirement age was introduced, forcing many working pensioners to retire and rely primarily on their pensions. A concurrent payment of pensions and wages was no longer to be favored.¹ It has been suggested that such a policy was followed more strictly in the Czech republic than in Slovakia however (Papaj 1994). This difference in implementation could lead to differences in income inequality for the two republics.

Persons retiring based on ‘old-age’ as well as disability increased over the period. Pension authorities attribute the increase in disability retirement to collusion between employees and employers

as they selected the most attractive retirement package for redundant workers. A World Bank report (1994) notes that employees more than two years away from retirement age were economically significantly better off with disability pensions than with unemployment benefits. Between 1991 and 1992, pensioners improved their income position relative to that of the working age population over the previous years.

Changing the maternal allowance to a parental allowance and extending benefits to cover the first three years of a child's life were other measures introduced to reduce the supply of persons seeking employment outside of the home. In Slovakia, the average number of monthly claimants doubled for these benefits between 1990 and 1992 (World Bank 1994). During this time period parental benefits were more generous than were unemployment benefits.

2. Income Taxes and Transfer Benefits

Under the previous regime, direct taxes played almost no role in redistribution. They were relatively small and only mildly progressive. Most taxation was borne by enterprises (in the form of profit or payroll taxes), although wage earners were required to pay taxes on their earnings. In January 1992, new tax laws came into effect. Personal income taxes were made more progressive and a new law was introduced for individuals to pay personal income tax on private non-wage income (Heady et al. 1994).

Social security has had a long tradition in these republics. However, the role of transfer benefits began to change during the early years of the transition in response to downturns in the economy and to price increases; unemployment and poverty became grave realities. To soften the loss of income for some and to boost it for others, several new social policies were introduced. Indexation of old age pensions was begun in 1990 to dampen the fall in the purchasing power of pensioners. Cash benefits for the unemployed also were introduced in this same year. A transfer benefit was introduced in 1990 and continued through 1992 to compensate individuals for the social consequences originating from a rise in prices, first for food (the benefit was the same for all persons), and second for energy (the benefit was increased for pensioners and children only). In 1991, a social safety net was introduced for the first time in the Czech and Slovak republics. The social safety net was to act as the state's guarantee of minimum

assistance for citizens in difficulty. Specific subsistence cash benefits were introduced for the low income as a part of this program, although marginal supplementary social assistance to needy individuals and families had existed previously. By 1992, family and child allowances were still primarily universal for households with children, even though means-testing principles were being introduced.

3. Commodity Taxes and Prices

The major exogenous shocks on consumer expenditures during the period were due to changes in commodity tax policies and to price liberalization. The first interim step in tax reform by the Czechoslovak government was the removal of the negative turnover tax rates or retail price subsidies on food in July 1990. Large scale price liberalization was launched on January 1, 1991 and served as the second stage. The negative turnover tax rates on most non-food commodities were removed (without a compensation benefit), and the number of turnover tax rates was reduced. By the middle of 1992 all price ceilings, except those on rents, were lifted. Prices rose considerably from 1989 to 1992 in the two republics, but more so in Slovakia (96 percent) than in the Czech republic (91 percent); prices for some commodities, such as those for energy, doubled. Compared to other countries in the region, these two republics experienced relative price stability.

Price increases were anticipated, and this anticipation too was likely to affect consumer spending. Jilek and colleagues (1995) note that there was an exaggeration of purchases of goods that took place in the second half of 1990. A similar anticipation was expected to exert an influence on consumer expenditures in late 1992, since a 23 percent value added tax (applicable to a large percentage of commodities) was introduced on January 1, 1993.

4. Consumer Goods

Vavrejnova (1993) reports that under the previous regime, the consumer market was characterized by low quality goods (especially non-food products such as metal products, tools, appliances for the household and garden, and some textiles) which required frequent repairs and replacement. Thus, with better quality goods (needing less repair and replacement) entering the market, only marginal changes in expenditures were expected for certain non-food goods.

C. Potential Relationship to Inequality

The reforms introduced and economic performance resulting are likely to have impacted the distributions of income and expenditures. For this study, it is expected that overall income and expenditure inequality will increase from 1989 to 1992, but only marginally (see Garner et al. 1995). Greater unemployment and more private sector employment is expected to lead to increases in aggregate income inequality. The increase is expected to be only marginal, however, because of the remaining dominate state sector and a cultural and historical tradition of equality (Jilek et al. 1995; Teichova 1988; Vecernik 1994). Controlled wages, more targeted social transfer benefits, and the indexation of pensions are expected to have equalizing effects on income inequality. Incomes are expected to be more equally distributed in Slovakia than in the Czech republic. This hypothesis is based on the expectation that social transfers, including pensions, will be more important as a part of total household income in Slovakia due to greater industrial restructuring and differences in social policy implementation.

Changes in commodity taxes, price liberalization, and greater access to a variety of commodities may lead to increases in expenditures for all households with little change in the distributions. However, due to the elimination of or reductions in subsidies for necessities, households are likely to have allocated a greater share of their total budget to these commodities and away from luxuries. Such a shift is likely to result in a decrease in expenditure inequality.

It is expected that income inequality will be lower than expenditure inequality. This is based on the fact that income was significantly compressed in these republics through 1992, particularly wage income.

II. METHODOLOGY AND DATA

A. Measures of Inequality

The measures of inequality used for this analysis include the decile ratio, the Robin Hood Index² (Atkinson and Micklewright 1992), Gini coefficient, and three generalized entropy measures (see Coulter et al. 1992). Each of the measures differs in their sensitivity to income or expenditure variations at different levels of the distribution. The Lerman and Yitzhaki (1985, 1989, 1994) source decomposition

method of the Gini coefficient is used to determine the share of aggregate inequality which is due to each component of income or expenditures, and the contribution of each to changes in aggregate inequality from 1989 to 1992.

B. Variables of Interest

Since economic well-being cannot directly be observed, two related proxies are considered in this study: income and consumption expenditures. Each proxy has its advantages and disadvantages (see Blundell and Preston 1991). Not accounted for in either proxy are subsidies for goods and services provided by the state, the leisure time of household members, or non-agricultural home production. The level of economic well-being is likely to be affected by this omission, however inequality may not be.

1. Income

Income is the most often used measure of economic well-being in inequality studies. It reflects one's potential control over economic resources, and can be viewed as an indication of one's ability to sustain a flow of consumption and thus to enjoy a certain level of living. For this study, flow income is the concept used and is defined as the sum of net monetary income (income from wages, agriculture production, pensions, benefits, welfare, and additional monetary income minus wage and other taxes paid by the household), the value of in-kind consumption, and the income flow from the owner occupancy of housing. In-kind consumption is evaluated by the Czech and Slovak Statistical Offices (SOs) at current prices which exist in the area in which the household lives. In-kind expenditures include those for food and beverages, rent in-kind, and other products and services. The values of agricultural production for home consumption and gifts received from persons outside the household are included in this latter group. The estimated value of the flow of services from the ownership of a home or cooperative is imputed from an hedonic rental equation.³

2. Consumption Expenditures

Consumption expenditures reflect one's exercise of control over economic resources, and are often considered a better approximation to life-cycle income than is current income when households

base their spending plans on their expected lifetime income. Consumption expenditures in this study are defined as the sum of household monetary expenditures (including commodity taxes) for goods and services plus the value of in-kind consumption (as defined previously), minus the value of goods and services given to persons outside the household as gifts.⁴ Also included is the value of imputed rent for homeowners. The full purchase price of durables is included in the total, since adequate information is not available to estimate the flow of services from these commodities.

C. Observation Unit and Treatment of Household Size

The observation unit for this study is the household, and is defined by the SO as a group of individuals who live together and share expenditures for food, housekeeping, home maintenance, and other commodities. To account for differences in household size, I divided each household's income and expenditures by the number of persons in the household, thus producing household per capita values.

Since the focus of this research is the economic well-being of individuals, household per capita income and expenditures are allocated to each member in the household. This weighting results in the individual distribution rather than household distribution of resources.

D. Data Description

Data are from the 1989 and 1992 Family Budget Surveys (FBS) of the Czech and Slovak republics, and are collected by the central SO in each republic. Data are collected monthly using a diary completed by households and a survey instrument which is completed by an interviewer. In 1989, households maintained diaries for approximately 11.6 months and in 1992 for 11.3 months. For this analysis I annualized the income and expenditure data. The 1989 Czech sample includes 3,978 households⁵ and the sample for 1992 includes 3,336. The Slovak sample for 1989 includes 1,702 households and for 1992, 1,695. The 1992 samples are from the primary files only (see Garner et al 1995).

Households are selected by the SOs for inclusion in the sample following an intentional quota design. The quota design or plan accounts for region of residence and several household characteristics. The primary household characteristic is the social group of the head of household. Four social groups are defined: manual workers, employees, persons working in agriculture, and pensioner households without economically active members. Using the quota design, within a region, households are included in the sample mainly based on their characteristics, not their exact addresses. Thus, if a visited household does not fit into one of the quota categories, other households are visited until the quota is met within a region. There is no adjustment to account for refusals to participate in the survey. Because of the quota procedure, response rates are not computed.

Changes in the sample design have been introduced since 1989 which could affect the inequality results. By 1992 (but not 1993 forward), if the head of the household became a private non-agricultural entrepreneur, the household would be excluded from the sample and a replacement household would be added. However by 1992, household heads who were private entrepreneurs working in agriculture, as well as all others working in agriculture, would be included in the a redefined agriculture social group; in 1989, the agriculture group only included cooperative farmers. In 1989 a household headed by a private entrepreneur would not be included in any of the social groups. Another change in the sample design is that if the household head became unemployed for more than three months, the household would be excluded in 1989; however, by 1992, the household would remain in the sample, in the social group as originally identified.

The SOs do not produce weights to combine households from the quota sampled FBS so that they are representative of Czech and Slovak households. Thus, for this analysis, I created household weights using data from the 1988 and 1992 Microcensus.⁶ The weights are based on the distribution of households in each of the republics defined in terms of social group, region, and family size. Based on the 1988 Microcensus, about 95.4 percent of all households in the Czech republic and 94.4 percent of all households in Slovakia are represented by the FBS samples. By 1992 the four social groups in the FBS

represent about 90 percent of Czech households, and 84.2 percent of households in Slovakia. Not included in the 1989 FBS are households headed by private entrepreneurs who represented about 0.2 percent of households in the Czech republic and 0.1 percent in Slovakia; in 1989 agricultural private entrepreneur headed households represented about .01 percent of Czech households and less than .04 percent of Slovak households. By 1992, private non-agricultural entrepreneur households, not accounted for in the FBS, represented 5.7 percent of all Czech households and 3.5 percent of Slovak households. Also not included in the FBS samples are pensioner households with economically active members. In 1989 this group accounted for approximately 4 percent of all households in the Czech republic and 5 percent in Slovakia; however, by 1992, 5.1 percent of Czech households and 8.2 percent of Slovak households were in this group. Other households not included in the four FBS social groups are those headed by students and non-working persons not receiving a pension or wage, for example.⁷

The distribution of persons by social group in the combined reweighted samples differs somewhat from 1989 to 1992.⁸ Persons in pensioner households represent 13 percent of all persons in the Czech 1989 FBS sample and 18 percent in the 1992 sample; the data for Slovakia reflect a large increase as well, from 11 to 20 percent of all persons. Employee households account for 37 percent of all persons in the Czech sample in 1989 and 35 percent in the Slovak sample. By 1992, the percentage of persons in the employee households drops to about 30 percent in the two republics. Worker households account for about 44 percent of persons in the Czech and Slovak FBS samples, while persons in agricultural households account for 10 percent or less of the total each year.

E. Reliability of Family Budget Survey Data

There may be some concern that income and expenditures from the FBSs may not be reliable for distributional analyses. According to individuals with the SOs, the expenditure data are considered to be fairly accurate, as is income from non-private entrepreneurial activities. However, it is likely that incomes from the shadow economy are poorly reported, as they are in other household surveys. Shadow

economy incomes include, for example, those from unregistered activities of cross-border workers in Austria and Germany, and incomes connected with tourism, namely those from renting private accommodations to foreigners. The importance of incomes associated with tourism increased largely in the first years of the transition period, particularly in the Czech republic (Jilek et al. 1995). The omission or under reporting of these incomes is likely to result in underestimates of the true change in income and inequality during this early transitional period.

Another factor which could affect the data is that there is no explicit design feature to rotate households in and out of the sample. Kalmus (1994) reports that for the Czech republic, about 50 percent of the same households are in both the 1989 and 1992 samples. The impact of this time in sample feature cannot be examined with the 1989 and 1992 data because household identifiers were not retained in the 1989 data file.

Perhaps the greatest potential problem for distributional analysis is that income and expenditures from the FBS may not adequately reflect the resources for households at the extreme ends of the distributions (Blagonrova et al. 1992). If this is true, the inequality results using these data will underestimate the inequality of economic well-being for the total population.

IV. RESULTS AND DISCUSSION

A. Overall Inequality

Table 1 includes the results for the measures of aggregate inequality.⁹ The lower the inequality index value, the more equal the distribution. The indices consistently show that inequality in consumption expenditures decreased in the Czech republic from 1989 to 1992. Decreases in inequality are also revealed by the decile ratio, Robin Hood Index, Gini coefficient, and mean log deviation measures for both income and expenditures for the two republics, with one exception. The exception is for flow income in Slovakia; here income inequality appears to increase over time when using the mean log deviation index. The trend toward decreasing income inequality is in contrast to that hypothesized.

Potential reasons for the decline in inequality over the time period are likely to be related to changes in industrial and employment structure, income taxes, and transfer benefits, as noted earlier. However, the small changes in income inequality may also indicate that income disparities in the private and informal sectors have not been as great as were expected, or that there has been a decrease in the quality of income reports.

The general pattern found in this research follows the continuing decline in money income inequality reported by Atkinson and Micklewright (1992) for Czechoslovakia from 1958 to 1988. For another transition country, the Ukraine, Kakwani (1995) also reported declining income inequality from 1980 to 1991 using FBS data (a marginal increase was found for 1992 however).

Quality for Household Per Capita Flow Income and Consumption Expenditures

Flow Income						Consumption Expenditures					
Czech Republic			Slovak Republic			Czech Republic			Slovak Republic		
	1992	% Change ^a	1989	1992	% Change ^a	1989	1992	% Change ^a	1989	1992	% Change ^a
4	0.214	-4.61	0.218	0.213	-2.31	0.242	0.224	-7.74	0.241	0.232	-3.80
1	0.127	-3.05	0.124	0.122	-1.61	0.144	0.134	-6.94	0.147	0.135	-8.16
2	0.179	-1.65	0.174	0.174	-0.39	0.203	0.190	-6.26	0.206	0.197	-3.97
2	0.052	-0.54	0.048	0.049	2.23	0.066	0.059	-10.16	0.068	0.066	-2.87
2	0.065	4.51	0.058	0.065	11.43	0.083	0.078	-5.79	0.085	0.105	23.47
5	0.056	1.28	0.052	0.054	4.89	0.071	0.064	-9.43	0.073	0.075	3.42

values obtained from using indices presented in tables due to rounding.

A different pattern in the change in inequality over time is exhibited by the measures which are more sensitive to variations at the top of the distribution, half the square of the coefficient of variation and the Theil measure, with the exception of Czech expenditures noted previously. Using these two measures, inequality increases in both income and expenditures from 1989 to 1992, with the greatest increases for Slovakia. These results suggest that those at the top, compared to those at the bottom, are perhaps better able to take advantage of greater opportunities in employment and in the consumer market present in 1992.

The results presented in Table 1 show that incomes are more equally distributed than are consumption expenditures across the republics and time period, as hypothesized. Incomes are more equally distributed in Slovakia than in the Czech republic, while expenditures are more equally distributed in the Czech republic than in Slovakia. The difference in income inequality between the two may be a reflection of greater private sector employment in the Czech republic. As alluded to earlier, a reason why incomes are more equally distributed than are expenditures may be because most wages were still being set by the state in 1992 and were designed to be fairly equal; equality of expenditures was not a direct aim of government policy though equal access to basic commodities was. The income-expenditure inequality relationship found here differs from that reported for developed western economies (e.g., Garner 1989; Kakwani 1986); in these countries, consumption expenditures are found to be more equally distributed across the population than are incomes.

The general trend toward equality in income shown by these results are in contrast to those reported by researchers using the Microcensus data. For example, Vecernik (1995) reports increasing income inequality with Gini indices of 0.20 in 1988 and 0.22 in 1992 for the Czech republic and 0.19 and 0.20 for Slovakia in the two years, respectively, using household per capita net monetary income. Thus one might conclude that the FBS data underestimate income inequality for the total population.

Regardless of the data source used, the Czech and Slovak republics have exhibited the most equal income distributions compared to other countries in the region during these early transition years. They also had the most equal distributions during the previous regime. Since 1989, Gini coefficients have been produced for other countries in the region of 0.217 or higher (Milanovic 1992a; Kakwani 1995).

However, for the states representing the former German Democratic Republic, Hauser and colleagues (1992) report a Gini index of 0.199 using income data collected nine months after the reunification with the western German state. Gini indices for incomes in Western countries have been reported to be in the range of 0.262 to 0.330 (see Smeeding 1991).

B. Decomposition by Factor Components

Decomposing the Gini coefficient provides a way for measuring how much a particular component contributes to aggregate inequality, and how changes in the components of income and expenditures have affected aggregate inequality over time. The basic ingredients needed are the share of each component, each component's correlation with the total income or expenditure, and each factor's own Gini. Using these, the percentage of total inequality¹⁰ and the percentage change in source contribution¹¹ can be derived. Decomposition results are presented in Tables 2A and 2B for income and 3A and 3B for expenditures. Because my interest is net income and consumption expenditures, wage and related taxes and the value of gifts given enter the decompositions as negative values. Results in the tables show that there were marked changes in income packaging over the time period, and that expenditure patterns also changed. The overall impact on aggregate inequality of these changes is greater for expenditures than for income, and the impacts are greater for the Czech republic than they are for Slovakia.

1. Flow Income

Gross wages of the head account for the largest percentage of total flow income inequality in both years for the two republics; however, the percentage of inequality due to this source is greater in 1992 than in 1989. This increase appears to be related to increasing inequality within head's wages,¹² and decreases in the share of persons allocated these wages. Wife's gross wages are the second largest contributor to aggregate income inequality each year, and there is also a decrease in the percentage of persons with these wages in both republics. However, in the Czech republic, the share of total income from wife's wages increases from 1989 to 1992. In contrast, in Slovakia, the share of total income from wife's wages decreases over the period. These results reveal that, as a separate source of income, wife's

wages have become more important during the transition in the Czech republic and less important in Slovakia.¹³

The percentage change in the source contribution can be used to identify which factors had the greatest influence on the change in aggregate inequality over time. The larger the percentage change, the greater the influence. The sum of the percentage changes equals the percentage change in aggregate inequality. Percentage change impacts can only be produced for components which are identifiable for both 1989 and 1992. Thus, in the case of income, the sum of the changes will not equal the percentage change in aggregate inequality.

Among those sources of income identifiable in both years in the Czech republic, changes in wife's wages produces the greatest influence on changing aggregate inequality; however, these changes had a disequalizing effect. The next largest percentage change source contribution is for wage taxes, leading to reductions in inequality, followed by changes in wife's pension, and head's agricultural income.

Like for the Czech republic, in Slovakia, the sign of the factor with the greatest influence on aggregate income inequality is positive. Changes in the head's pension produces a disequalizing effect. Equality is enhanced by changes in head's agricultural income and wife's wages.

Changes in agricultural income appear to have lead to greater equality in both republics, but the changes were more equalizing for Slovakia. Changes in taxes played a minor role in reducing inequality in Slovakia, unlike in the Czech republic. Although pensions became more important in total income from 1989 to 1992, the net effect of changes in pension income contributed to reductions in inequality in the Czech republic but increases in Slovakia. This difference may be due to variations in program implementation related to retirement schemes and indexation. In 1989 and 1992, transfer benefits accounted for slightly greater shares of total income, with the share greater in Slovakia. In both republics, the introduction of unemployment, subsistence, and compensation benefits is likely to have contributed significantly to decreasing income inequality.

Gini elasticities¹⁴ are also presented in Tables 2A and 2B. Negative elasticities are an indication that sources of income are more directed at the lower end of the income distribution. For 1989 these

sources include head's pensions, child allowances, other benefits, and welfare payments (which include those paid by non-government charities). By 1992 monetary benefits for unemployment, subsistence, compensation have this distinction.

composition: Flow Income in the Czech Republic in 1989 and 1992

1992											% Change in Source Contribution
Household Per Capita Income	Standard Deviation	Gini Coefficient	Standard Error	Household Per Capita Income	Standard Deviation	Gini Coefficient	Standard Error				
25096.69	8871.640	0.182	0.002	36325.99	13128.09	0.179	0.003				-1.65
Share of total income	Correlation	Factor Gini	% of Total Inequality	Gini Elasticity	Share of total income	Correlation	Factor Gini	% of Total Inequality	Gini Elasticity	% ne 0	
0.468	0.550	0.394	0.558	1.191	0.740	0.427	0.528	0.457	0.575	1.346	0.78
0.213	0.469	0.566	0.310	1.457	0.562	0.220	0.480	0.613	0.361	1.642	4.48
0.023	0.497	0.945	0.061	2.578	0.090	0.023	0.499	0.944	0.061	2.630	-0.05
0.028	0.407	0.467	0.029	1.043	0.975	0.030	0.514	0.524	0.045	1.503	1.47
0.035	0.292	0.942	0.053	1.509	0.080	0.031	0.163	0.941	0.026	0.857	-2.66
0.018	0.328	0.955	0.030	1.720	0.053	0.014	0.277	0.964	0.021	1.492	-1.02
0.002	0.748	0.996	0.007	4.089	0.005	0.001	0.316	0.997	0.001	1.755	-0.60
0.001	0.674	0.996	0.002	3.682	0.012	0.000	0.204	0.995	0.000	1.134	-0.17
0.088	-0.047	0.867	-0.020	-0.224	0.239	0.102	-0.006	0.833	-0.003	-0.026	1.71
0.034	0.196	0.903	0.033	0.969	0.154	0.040	0.026	0.877	0.005	0.126	-2.83
0.006	0.273	0.984	0.009	1.474	0.023	0.005	0.259	0.985	0.007	1.423	-0.23
0.050	-0.495	0.476	-0.065	-1.294	0.659	0.033	-0.490	0.507	-0.046	-1.387	2.04
0.023	0.225	0.777	0.022	0.958	0.490	0.017	0.248	0.800	0.019	1.107	-0.38
0.006	-0.391	0.913	-0.011	-1.961	0.162	0.012	-0.302	0.887	-0.018	-1.496	-0.63
					0.043	0.002	-0.112	0.979	-0.001	-0.614	
					0.011	0.000	-0.661	0.994	-0.001	-3.664	
					0.896	0.040	-0.429	0.305	-0.029	-0.730	
0.001	-0.288	0.989	-0.002	-1.564	0.035	0.001	-0.279	0.982	-0.002	-1.530	-0.04
0.004	0.426	0.958	0.010	2.241	0.126	0.003	0.472	0.966	0.008	2.545	-0.19
0.005	0.437	0.957	0.011	2.297	0.141	0.005	0.466	0.963	0.013	2.506	0.17
					0.031	0.002	0.525	0.987	0.007	2.893	
					0.003	0.001	0.673	0.999	0.002	3.749	
					0.029	0.004	0.429	0.990	0.009	2.372	
0.047	0.476	0.768	0.095	2.008	0.685	0.042	0.528	0.785	0.097	2.315	-0.01
0.060	0.357	0.526	0.062	1.032	0.894	0.064	0.366	0.529	0.069	1.080	0.64
0.018	0.227	0.554	0.013	0.691	0.610	0.021	0.254	0.539	0.016	0.765	0.31
-0.127	0.657	0.439	-0.202	1.583	0.782	-0.134	0.639	0.493	-0.236	1.756	-3.05
-0.003	0.350	0.770	-0.005	1.483	0.482	-0.003	0.379	0.847	-0.005	1.793	-0.06

composition: Flow Income in the Slovak Republic in 1989 and 1992

1992											
Household					Household					% Change in Source Contribution	
Per Capita Income	Standard Deviation	Gini Coefficient	Standard Error		Per Capita Income	Standard Deviation	Gini Coefficient	Standard Error			
22349.61	7642.030	0.174	0.004		31272.12	11287.98	0.174	0.005		-0.39	
Share of total income	Correlation	Factor Gini	% of Total Inequality	Gini Elasticity	Share of total income	Correlation	Factor Gini	% of Total Inequality	Gini Elasticity		
0.449	0.502	0.392	0.508	1.131	0.733	0.401	0.481	0.470	0.521	1.304	1.29
0.228	0.499	0.533	0.348	1.526	0.565	0.218	0.413	0.591	0.306	1.404	-4.19
0.026	0.465	0.941	0.066	2.508	0.069	0.022	0.466	0.958	0.055	2.571	-1.12
0.028	0.493	0.507	0.040	1.433	0.966	0.026	0.502	0.499	0.038	1.443	-0.24
0.053	0.350	0.919	0.098	1.846	0.077	0.031	0.220	0.943	0.037	1.195	-6.04
0.021	0.359	0.946	0.041	1.948	0.059	0.013	0.207	0.960	0.015	1.145	-2.60
0.002	0.758	0.997	0.007	4.335	0.005	0.001	0.826	0.998	0.006	4.748	-0.12
0.001	0.438	0.994	0.001	2.497	0.010	0.000	0.763	0.999	0.001	4.389	-0.08
0.066	-0.125	0.902	-0.043	-0.647	0.216	0.107	0.084	0.834	0.043	0.403	8.59
0.022	0.152	0.936	0.018	0.814	0.150	0.038	0.137	0.887	0.026	0.700	0.82
0.012	0.324	0.961	0.021	1.784	0.046	0.010	0.377	0.968	0.021	2.100	0.06
0.070	-0.523	0.419	-0.088	-1.259	0.725	0.048	-0.495	0.446	-0.061	-1.273	2.71
0.017	0.173	0.785	0.013	0.778	0.442	0.015	0.286	0.812	0.021	1.339	0.71
0.006	-0.451	0.920	-0.015	-2.381	0.132	0.011	-0.301	0.910	-0.018	-1.580	-0.34
					0.063	0.002	-0.325	0.966	-0.004	-1.810	
					0.027	0.001	-0.536	0.985	-0.003	-3.041	
					0.895	0.045	-0.319	0.282	-0.023	-0.519	
0.001	-0.306	0.987	-0.002	-1.734	0.028	0.001	0.217	0.989	0.001	1.237	0.26
0.005	0.476	0.950	0.013	2.592	0.101	0.003	0.467	0.965	0.008	2.599	-0.53
0.002	0.555	0.977	0.007	3.109	0.079	0.003	0.404	0.970	0.006	2.257	-0.05
					0.005	0.000	0.170	0.997	0.000	0.978	
					0.014	0.004	0.473	0.994	0.010	2.712	
					0.003	0.000	0.585	0.999	0.000	3.368	
0.042	0.444	0.775	0.084	1.977	0.664	0.037	0.523	0.782	0.086	2.354	0.19
0.055	0.387	0.559	0.068	1.241	0.887	0.060	0.455	0.561	0.089	1.472	2.04
0.022	0.217	0.521	0.014	0.649	0.704	0.031	0.291	0.500	0.026	0.839	1.18
-0.126	0.640	0.428	-0.198	1.575	0.762	-0.128	0.571	0.491	-0.206	1.616	-0.75
-0.002	0.266	0.866	-0.002	1.320	0.245	-0.002	0.304	0.926	-0.003	1.621	-0.08

2. Consumption Expenditures

Presented in Tables 3A and 3B are the results of the Gini decomposition by detailed expenditure groups. The commodity which accounts for the largest share of inequality in total expenditures in the Czech republic is private transportation in 1989 and 1992. Second in importance, in terms of accounting for inequality in each year, is food in 1989, followed by furnishings and equipment; by 1992, the ranking of the two commodity groups is reversed. Changes in private transportation expenditures account for the greatest change in aggregate expenditure inequality over the time period, producing an equalizing influence. The influence of changes in commodities other than private transportation were quite small and fairly similar for the Czech republic.

Private transportation also accounted for the greatest share of aggregate expenditure inequality in Slovakia in 1989, followed by textiles and clothing, then food. However, by 1992, food expenditures accounted for the largest share of aggregate expenditure inequality, textiles and clothing was second, and private transportation was third. Aggregate expenditure inequality over the time period was most influenced by changes in private transportation expenditures, followed by those for 'other expenditures' and food.

In 1990 and 1991, subsidies for food and energy, commodities with lower elasticities, were removed. In 1991 and 1992, higher tax rates were applied to commodities with relatively higher elasticities, such as private transportation (Kamenichova 1993). One might predict that the removal of such subsidies would increase aggregate inequality, while the application of the taxes on commodities like private transportation would likely lead to reductions. For these commodities, such changes appear to have offset each other in terms of impacting relative expenditure distributions.

In addition to general changes in commodity taxes and prices and the availability of commodities previously discussed, differential changes in the cost-of-living for different subgroups of the population are also likely to have affected aggregate expenditure inequality (see Garner et al. 1995). For example, pensioner households (compared to those headed by manual workers, employees, and those working in agriculture) experienced the greatest relative price increases for non-food commodities and services versus for food and beverages from 1989 to 1992. With necessities like food and utilities becoming

relatively more expensive, households shifted their spending away from commodities like private transportation, on average. However, the combination of the shift to necessities and the increase in the proportion of persons in pensioner headed households is likely to have produced counteracting impacts on inequality. The effect of such demographic shifts on aggregate inequality will be explored in future analysis. The expenditure results could also be driven by decreases in real income,¹⁵ another issue for future study.

position: Consumption Expenditures in the Czech Republic in 1989 and

1992														
Total					Household						% Change in Source Contribution			
Source	Gini Correlation	Factor Gini	% of Total Inequality	Gini Elasticity	Per Capita Expenditure	Standard Deviation	Gini Coefficient	Standard Error	Share of total expenditures	Gini Correlation		Factor Gini	% of Total Inequality	Gini Elasticity
48	0.9341270	0.203	0.003		33780.38	13382.76	0.190	0.004						-6.26
3	0.434	0.212	0.103	0.454	1.000	0.244	0.423	0.208	0.113	0.462				0.24
7	0.421	0.291	0.016	0.603	1.000	0.022	0.444	0.282	0.015	0.660				-0.30
2	0.439	0.409	0.028	0.885	0.993	0.028	0.460	0.422	0.029	1.020				-0.14
1	0.396	0.402	0.032	0.784	0.944	0.039	0.358	0.436	0.032	0.821				-0.23
2	0.580	0.298	0.095	0.852	0.997	0.095	0.569	0.328	0.093	0.981				-0.80
3	0.502	0.259	0.018	0.642	1.000	0.030	0.510	0.275	0.022	0.738				0.28
2	0.256	0.689	0.001	0.871	0.881	0.004	0.330	0.650	0.004	1.129				0.27
3	0.559	0.606	0.097	1.671	0.984	0.058	0.622	0.624	0.119	2.041				1.42
3	0.704	0.691	0.200	2.399	0.804	0.063	0.593	0.615	0.120	1.919				-8.74
3	0.567	0.501	0.095	1.401	1.000	0.063	0.618	0.480	0.099	1.562				-0.28
3	0.229	0.755	0.011	0.855	0.781	0.014	0.241	0.763	0.013	0.969				0.14
9	0.463	0.805	0.035	1.838	0.618	0.019	0.361	0.796	0.029	1.511				-0.79
3	0.325	0.295	0.016	0.473	0.986	0.035	0.365	0.282	0.019	0.541				0.19
0	0.259	0.358	0.014	0.457	0.996	0.037	0.258	0.382	0.019	0.518				0.44
4	0.182	0.639	0.008	0.573	0.908	0.037	0.183	0.583	0.021	0.560				1.11
4	0.433	0.537	0.016	1.146	0.936	0.015	0.433	0.513	0.018	1.167				0.04
4	0.349	0.442	0.011	0.761	0.996	0.016	0.382	0.400	0.013	0.803				0.09
1	0.541	0.666	0.037	1.777	0.938	0.024	0.522	0.667	0.044	1.833				0.36
3	0.412	0.477	0.018	0.970	0.989	0.017	0.482	0.469	0.020	1.188				0.06
3	0.241	0.531	0.005	0.631	0.861	0.010	0.262	0.624	0.008	0.861				0.31
2	0.438	0.755	0.035	1.630	0.542	0.018	0.431	0.790	0.033	1.790				-0.49
1	0.297	0.862	0.002	1.261	0.745	0.001	0.300	0.834	0.002	1.319				0.02
3	-0.289	0.850	-0.003	-1.212	0.201	0.003	-0.219	0.872	-0.003	-1.005				0.08
2	0.350	0.871	0.004	1.502	0.512	0.003	0.306	0.859	0.005	1.382				0.07
7	0.229	0.466	0.014	0.526	0.920	0.021	0.226	0.478	0.012	0.569				-0.30
4	0.594	0.567	0.089	1.661	0.987	0.051	0.575	0.590	0.090	1.782				-0.49
5	0.350	0.526	0.059	0.908	0.894	0.069	0.349	0.529	0.067	0.970				0.31
9	0.456	0.687	-0.060	1.544	0.784	-0.035	0.422	0.708	-0.055	1.572				0.86

Composition: Consumption Expenditures in the Slovak Republic in 1989 and 1992

1992											
Household					Household					% Change in Source Contribution	
Per Capita Expenditure	Standard Deviation	Gini Coefficient	Standard Error		Per Capita Expenditure	Standard Deviation	Gini Coefficient	Standard Error			
26.03	8332.910	0.206	0.005		29784.06	13635.17	0.197	0.006		-3.97	
of total Expenditures	Gini Correlation	Factor Gini	% of Total Inequality	Gini Elasticity	% of total expenditures	Gini Correlation	Factor Gini	% of Total Inequality	Gini Elasticity		
238	0.464	0.197	0.105	0.444	1.000	0.256	0.504	0.203	0.133	0.518	2.18
026	0.491	0.278	0.017	0.665	0.999	0.020	0.507	0.287	0.015	0.738	-0.30
038	0.455	0.390	0.033	0.862	0.994	0.030	0.424	0.400	0.026	0.860	-0.81
041	0.425	0.422	0.036	0.873	0.879	0.037	0.341	0.479	0.031	0.827	-0.68
131	0.646	0.295	0.122	0.928	0.999	0.111	0.567	0.339	0.109	0.975	-1.76
028	0.559	0.262	0.020	0.713	1.000	0.029	0.554	0.275	0.023	0.773	0.14
001	0.301	0.717	0.002	1.048	0.710	0.002	0.327	0.731	0.003	1.212	0.12
050	0.576	0.645	0.091	1.806	0.951	0.050	0.551	0.657	0.092	1.835	-0.24
065	0.680	0.722	0.155	2.391	0.680	0.050	0.574	0.697	0.102	2.026	-5.68
056	0.595	0.539	0.086	1.558	1.000	0.050	0.585	0.493	0.073	1.461	-1.62
012	0.167	0.722	0.007	0.586	0.747	0.013	0.167	0.750	0.008	0.634	0.06
019	0.449	0.853	0.035	1.863	0.431	0.017	0.278	0.832	0.020	1.172	-1.58
036	0.318	0.289	0.016	0.446	0.987	0.044	0.385	0.322	0.028	0.627	1.06
031	0.342	0.369	0.019	0.614	0.996	0.039	0.315	0.441	0.027	0.703	0.73
019	0.200	0.602	0.011	0.586	0.780	0.036	0.209	0.586	0.022	0.622	1.01
013	0.457	0.554	0.016	1.232	0.903	0.014	0.415	0.519	0.015	1.090	-0.19
015	0.386	0.468	0.013	0.879	0.996	0.018	0.462	0.409	0.017	0.956	0.29
016	0.589	0.700	0.033	2.007	0.871	0.019	0.526	0.721	0.036	1.922	0.17
018	0.586	0.515	0.026	1.466	0.979	0.015	0.496	0.480	0.018	1.206	-0.92
006	0.307	0.637	0.006	0.951	0.752	0.008	0.303	0.697	0.008	1.069	0.23
011	0.482	0.839	0.022	1.965	0.342	0.002	0.422	0.881	0.003	1.883	-1.92
001	0.299	0.869	0.002	1.262	0.689	0.002	0.413	0.877	0.003	1.835	0.13
003	-0.204	0.821	-0.003	-0.814	0.214	0.003	-0.135	0.862	-0.001	-0.588	0.12
002	0.319	0.927	0.003	1.439	0.375	0.003	0.284	0.896	0.004	1.290	0.08
027	0.168	0.428	0.010	0.350	0.861	0.019	0.132	0.452	0.006	0.302	-0.40
052	0.588	0.558	0.082	1.595	0.983	0.059	0.646	0.608	0.117	1.990	2.94
061	0.386	0.559	0.063	1.048	0.887	0.063	0.419	0.561	0.076	1.191	0.89
018	0.441	0.800	-0.030	1.717	0.476	-0.014	0.382	0.834	-0.023	1.614	0.81

IV. SUMMARY AND CONCLUSIONS

The focus of this study has been changing welfare in a changing world, with emphasis on the Czech and Slovak republics during the early years of the country's transition to a pluralistic, market-based democracy. Welfare, based on an economic perspective, is examined in terms of inequality in the distribution of income and expenditures across individuals. Using data from the Family Budget Surveys, I found that aggregate inequality decreased or changed very little, on average, during the early years of the transition from centrally planned to more market oriented economies. Compared to incomes in the Czech republic, those in Slovakia were more equally distributed; this is probably not surprising given the latter republic's preference for greater government participation in the economy and less harsh economic reforms. Consumption expenditures were slightly more unequally distributed than were incomes in the two republics over the two years. As with flow income, consumption expenditure inequality decreased from 1989 to 1992 in the two republics, with decreases greater for the Czech republic. However, none of the Gini coefficients for income are statistically significantly different across republics or across years. The same is true for expenditures. The decile ratio, Robin Hood Index, and mean log-deviation measures also reveal a trend towards equality in both resources. However, the other two Entropy indices suggest that inequality in income has actually increased from 1989 to 1992. For expenditures, increases in expenditures are also revealed for Slovakia but there is a decrease for the Czech republic. This difference in trend is likely a reflection of the sensitivity of the inequality measures to variations in different parts of the distribution.

In addition to the factors discussed in previous sections, the trend toward greater equality in income and expenditures may also be related to the methodology and data. First, the results may be sensitive to the weighting scheme used to combine the FBS, as well as to sample representativeness. Pensioner households, and thus smaller households, may be weighted more heavily than they should be. Giving pensioner households less weight would be expected to increase aggregate inequality. Jilek and colleagues (1995) report an increase in per capita net monetary income for all social groups except pensioners from 1988 to 1992 in the Czech republic, using Microcensus data, but an increase in income

inequality over all. The decrease in income inequality experienced by pensioners may be counteracting the increase in inequality accounted for by households in the other social groups. Second, the FBS samples, upon which this analysis is based, likely do not adequately account for persons with resources at the extremes of the distribution, as noted earlier, resulting in underestimates of total population inequality.

The sensitivity of some of the methodological and data problems on future trends can be tested using more recently collected FBS data. However, a more direct way to deal with these potential problems is to eliminate them or to reduce the possibility for their occurrence. I strongly recommend that the sample design of the FBS be changed so that the entire population in each of the new countries is represented. Sample rotation would also be desirable so that 'self-selection time-in-sample' biases could be reduced. Changes such as these are necessary as expenditures gain in importance as a complementary measure to income in assessing the economic well-being of individuals living in these emerging market economies. Including a broader set of economic measures (e.g., assets and liabilities) would increase the usefulness of the FBS as well.

In this study I assumed a relative welfare concept by concentrating on inequality and changes in inequality. However, such an analysis provides no information concerning levels of income and expenditures, and thereby provides little information concerning whether welfare actually improved over the time period; greater equality does not necessarily translate into welfare improvement. To address this issue I needed information about both levels and distributions. Using such information, I plotted generalized Lorenz curves (not shown) and found that changes in real income and expenditures from 1989 to 1992 for the two republics were not welfare improving. Thus, I must conclude that the general trend towards equality did not compensate for decreases in real income and expenditures during this transitional period.

What might the future hold in terms of inequality and welfare in general? Continuing changes are expected for several years as the economy continues to change and as current policies are revised, old ones discarded, and new ones introduced. One change to be expected is a reverse in the relationship between income and expenditure inequality. With fewer controls by the state and improvements in the

economy, it is quite likely that incomes will become more unequal than expenditures, exhibiting the same pattern found in western economies. Differences in reported inequality for the republics are likely to continue with the split of the Czech and Slovak Federal Republic into two separate countries, and their decision to pursue different paths to balance the relationship between state and market. Not discussed in this study are the potential dislocations in the market which may result from reductions in labor hoarding and the removal of rent subsidies. Whether these will translate into greater or less inequality depends upon the performance of the economy and government policies. Changes in inequality and welfare are also expected as the population becomes more accustomed to the market, with different opportunities in employment and ways to meet consumer demand.

Even with these expected future changes, the distribution of economic resources may remain fairly equal across the populations in the "new" Czech Republic and Slovakia. This may reflect more societies' preference for equality and social peace than it does changes in the economic situation or policies of the countries. Whether this preference will continue into the next chapter of history is a question which remains to be answered.

Although inequality may change little, we can hope that welfare will increase, reflecting the realization of dreams and renewed freedoms. To account for increased opportunities--those being experienced by the current generation and those being established for future generations--, for changes in attitudes and a sense of freedom to pursue one's dreams, and for the costs of this pursuit, an expanded set of methods is needed, in addition to a broader measure of welfare. The result of such an endeavor would be a more complete picture of the impact of the transition on individuals and households.

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NOTES

¹ In 1992, the existing legislation enabled an individual to receive an unlimited old-age pension simultaneously with income from paid work for one year.

² The Robin Hood Index is based on data grouped by deciles; it is an approximation of the share of total income or expenditures which has to be taken from those above the mean, and transferred to those below the mean in order to achieve equality.

³ Contact the author for details.

⁴ Cash gifts given to persons outside the household could not be identified in the 1989 file; therefore, these are included in 'other expenditures' in 1989. For consistency, they are also included in 'other expenditures' for 1992 as well.

⁵ One household was dropped from the original sample because total consumption expenditures were less than zero.

⁶ Response rates for the Microcensus in 1988 were 95.8 percent in the Czech republic and 98.4 percent in Slovakia (Atkinson and Micklewright 1992). For 1992, the response rate was approximately 84 percent for the Czech Republic and 93 percent for Slovakia (LIS 1995).

⁷ Percentage distributions for the Microcensus are based on the author's own calculations.

⁸ Although pensioner households with economically active members were not included in the FBS quota samples, their distributions from the Microcensus were used in the creation of weights to combine the FBS samples. This procedure was followed due to the Microcensus data made available to the author and the coding of variables provided by the SOs. Following this procedure, the share of pensioner households with economically active members was allocated to the worker group for the Czech sample in 1992 and to the pensioners without economically members group for the Slovak sample. In the 1992 Microcensus household data files, the agriculture social group, as defined by the SOs, includes only households headed by cooperative farmers in Slovakia; however, for the Czech republic, any household head working in agriculture is included in this social group.

⁹ Inequality indices were also produced for a reduced sample which only included households who participated in the survey for a full 12 months. The indices are only slightly lower than for the analysis sample, the difference being in the third digit to the right of the decimal point for most all cases.

¹⁰ The percentage of total inequality due to a source is obtained by dividing the product of the share of total income (or expenditures), Gini correlation, and Factor Gini by the overall Gini coefficient.

¹¹ The percentage change in the source's contribution to aggregate inequality is obtained by multiplying, for each source, the percent of total inequality attributed to the source (times 100) in the base period by the percent change in the absolute contribution (see Jenkins 1995).

¹² The Gini coefficient for persons with nonzero values can be calculated using the following equation: $G = (1-P) + P \cdot G^*$ where G = Factor Gini as presented in the table, P = percentage of nonzero values, and G^* = Factor Gini for distribution with no zeroes (Yitzhaki 1990).

¹³ In tables 2A and 2B, wages are before taxes while total income is net of taxes. Therefore, to determine the amount of total after tax income inequality due to wages, the percentage of total inequality due to wage taxes must be subtracted from the percentage for total gross wages (those of the head, wife, and other).

¹⁴ The income elasticities presented are with respect to after-tax income and thus are typically higher than elasticities with respect to before-tax income. The after-tax elasticities could be transformed into before-tax elasticities by multiplying each of the former by the elasticity of after-tax income with respect to gross income (see Lerman and Yitzhaki 1994).

¹⁵ Real expenditures for utilities increased from 1989 to 1992, while those for other commodities decreased as did real income. Real decreases in food expenditures were less than real decreases in income.